

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/061410 A1

(51) International Patent Classification⁷: **C04B 35/00**,
35/624

172, DK-6700 Esbjerg (DK). IVERSEN, Steen, Brummerstedt [DK/DK]; Gøngehusvej 117, DK-2950 Vedbæk (DK).

(21) International Application Number:
PCT/DK2003/000934

(74) Agent: PLOUGMANN & VINGTOFT A/S; Sundkrogs-
gade 9, P.O. Box 831, DK-2100 Copenhagen Ø (DK).

(22) International Filing Date:
23 December 2003 (23.12.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, EG, ES, FI (utility model), FI, GB, GD, GE, GI, GM, IIR, IU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (*for all designated States except US*): AALBORG UNIVERSITET [DK/DK]; Fredrik Bajers Vej 5, DK-9220 Aalborg Ø (DK).

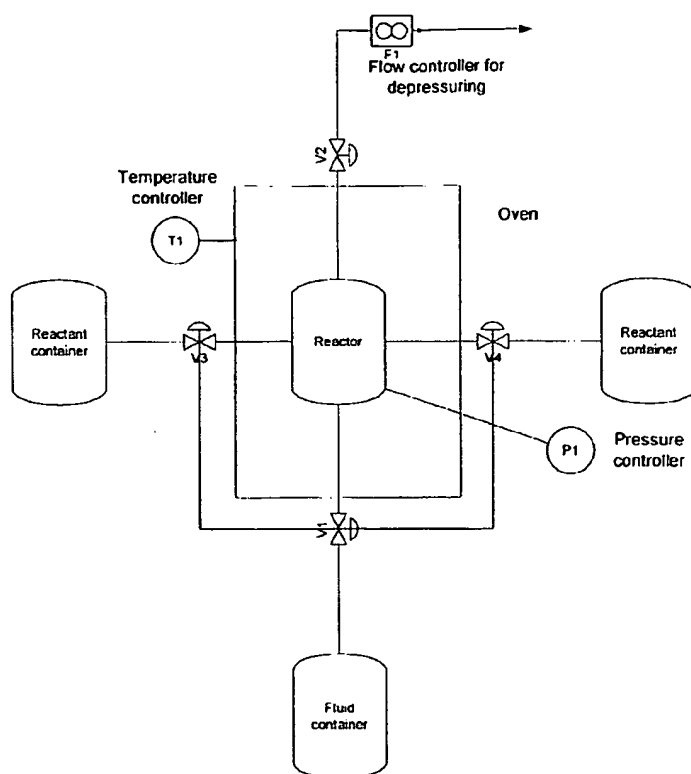
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): JENSEN, Henrik [DK/DK]; Spangsbjerg Kirkevej 50, 3., DK-6700 Esbjerg (DK). SØGAARD, Erik, Gydesen [DK/DK]; Kirkegade

(84) Designated States (*regional*): ARIPO patent (BW, GI, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR PRODUCTION OF A COMPOUND HAVING SUBMICRON PARTICLE SIZE AND A COMPOUND PRODUCED BY THE METHOD



(57) Abstract: The invention relates to an improved method of manufacturing a compound having a sub-micron primary particle size such as a metal compound such as metal oxides, metaloxy hydroxides metal hydroxides, metal carbides, metal nitrides, metal carbonitrides, metal borides, electroceramics and other such compound, said method comprising the steps of: introducing a solid reactor filling material in a reactor, introducing a metal-containing precursor, a semi-metal-containing precursor, a metal-containing oxide or a semi-metal-containing oxide in said reactor, introducing a reactant or a substitution source into the said reactor, and introducing a supercritical solvent into the said reactor. These steps result in the formation of said compound in the proximity of the said solid reactor filling material.

WO 2005/061410 A1



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report